

REMARKS

Claims 1-11, amended for clarity, remain herein.

1. The specification has been edited to include subtitles, and the original Abstract has been amended.

2. Claims 1-11 were rejected under 35 U.S.C. §112, second paragraph. Claims 1, 3 and 6 have been amended to replace the phrase "operation and/or the shutdown" with "warming and cooling." See applicants' specification, page 5, lines 14-20. Claims 8 and 10 have been reworded, thereby mooting their rejection. Reconsideration and withdrawal of the rejection are respectfully requested.

3. Claims 1-8 were rejected under 35 U.S.C. §102(b) over Buer et al. U.S. Patent 5,963,104.

The presently claimed device for generating a random signal includes a transient-state electronic circuit having an output terminal and means for controlling warming and cooling of the circuit to generate a random signal at the output terminal. This arrangement is nowhere disclosed or suggested in the cited reference.

The Office Action cites Buer '104 as allegedly disclosing circuit 510 as including an odd-numbered series of inverting circuits for inverting its input and output and a fee back loop. Actually Buer '104 discloses circuit 501 of the ring oscillator function merely for providing a logic signal to enable the ring oscillator. Buer '104 does not use high thermal noise during warm-up for generation of the random signal. Buer '104 does not disclose means for controlling warming and cooling of the circuit to generate a random signal, as recited in applicants' claims 1 and 8.

Moreover, applicants' device further includes control elements for consecutively and alternately controlling warming and cooling of the transient-state circuit of each of the random signal generating devices; and a combining element for combining output signals from the random signal generating devices. Buer '104 does not disclose controlling the ring oscillators in turn, which serves to have one or more devices cooling down, while others are warming up.

For the foregoing reasons Buer '104 fails to disclose all elements of applicants' claimed invention, and therefore is not a proper basis for rejection under §102. And, there is no disclosure or teaching in Buer '104 that would have suggested

the desirability of modifying any portions thereof effectively to anticipate or suggest applicants' presently claimed invention. Claims 2-7, which depend from claim 1, are allowable for the same reasons explained herein for claim 1. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

4. Claim 11 was rejected under 35 U.S.C. §103(a) over Buer '104 and Soenen et al. U.S. Patent 5,961,577.

Claim 11, which depends from claim 1, is allowable for the same reasons explained herein for claim 1.

Moreover, the Office Action admits that Buer '104 does not disclose the device incorporated in a programmable integrated circuit, and cites Soenen '577 as allegedly teaching same. While Soenen '577 discloses an analog logic circuit, Soenen '577 does not provide the deficiencies of Buer '104 described herein, i.e., Soenen '577 does not disclose means for controlling warming and cooling of the circuit to generate a random signal, as recited in claim 1, from which claim 11 depends.

For the foregoing reasons, neither Buer '104 or Soenen '577 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art

to applicants' claimed invention. Nor is there any disclosure or teaching in either of these references that would have suggested the desirability of combining any portions thereof effectively to anticipate or suggest applicants' presently claimed invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

5. Claims 1-5 and 7 were rejected under 35 U.S.C. §102(b) over Soenen '577.

The presently claimed device for generating a random signal includes a transient-state electronic circuit having an output terminal and means for controlling warming and cooling of the circuit to generate a random signal at the output terminal. This arrangement is nowhere disclosed or suggested in the cited reference.

The Office Action cites Soenen '577 as allegedly disclosing circuit 30 as including an odd-numbered series of inverting circuits for inverting its input and output and a fee back loop. Actually Soenen '577 discloses circuit 30 of the ring oscillator function merely for providing a logic signal to enable the ring oscillator. Soenen '577 does not use high thermal noise during warm-up for generation of the random signal. Soenen '577 does

not disclose means for controlling warming and cooling of the circuit to generate a random signal, as recited in applicants' claims 1 and 8.

Moreover, applicants' device further includes control elements for consecutively and alternately controlling warming and cooling of the transient-state circuit of each of the random signal generating devices, and a combining element for combining output signals from the random signal generating devices. Soenen '577 does not disclose controlling the ring oscillators in turn, which serves to have one or more devices cooling down, while others are warming up.

For the foregoing reasons, Soenen '577 fails to disclose all elements of applicants' claimed invention, and therefore is not a proper basis for rejection under §102. And, there is no disclosure or teaching in Soenen '577 that would have suggested the desirability of modifying any portions thereof effectively to anticipate or suggest applicants' presently claimed invention. Claims 2-5 and 7, which depend from claim 1, are allowable for the same reasons explained herein for claim 1. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

6. Claim 11 is rejected under 35 U.S.C. §103(a) over Soenen '577.

Claim 11, which depends from claim 1, is allowable for the same reasons explained herein for claim 1, namely, Soenen '577 does not disclose means for controlling warming and cooling of the circuit to generate a random signal, as recited in claim 1, from which claim 11 depends.

Moreover, Soenen '577 discloses an analog programmable circuit, not a pure logic circuit. Soenen '577 discloses a logic circuit that is a combination of transistors, wherein such combination cannot be programmed into a programmable digital device. Additionally, Soenen '577 does not the thermal noise to start the oscillator.

For the foregoing reasons, Soenen '577 does not contain any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicants' claimed invention. Nor is there any disclosure or teaching in Soenen '577 that would have suggested the desirability of modifying any portions thereof to anticipate or suggest applicants' presently claimed invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

7. Claims 1-5 were rejected under 35 U.S.C. §102(e) over Walsh et al. U.S. Patent 6,480,072.

Walsh '072 discloses an analog circuit VCO, but does not use thermal noise at start time, i.e., for controlling warming and cooling the oscillator circuit to generate a random signal.

For the foregoing reasons, Walsh '072 fails to disclose all elements of applicants' claimed invention, and therefore is not a proper basis for rejection under §102. And, there is no disclosure or teaching in Walsh '072 that would have suggested the desirability of modifying any portions thereof effectively to anticipate or suggest applicants' presently claimed invention. Claims 2-4, which depend from claim 1, are allowable for the same reasons explained herein for claim 1. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

8. Claim 11 is rejected under 35 U.S.C. §103(a) over Walsh '072.

Claim 11, which depends from claim 1, is allowable for the same reasons explained herein for claim 1, namely, Walsh '072 does not disclose means for controlling warming and cooling of the circuit to generate a random signal, as recited in claim 1, from which claim 11 depends.

For the foregoing reasons, Walsh '072 does not contain any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicants' claimed invention. Nor is there any disclosure or teaching in Walsh '072 that would have suggested the desirability of modifying any portions thereof to anticipate or suggest applicants' presently claimed invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

All claims 1-11 are now proper in form and patentably distinguished over all grounds of rejection stated in the Office Action. Accordingly, allowance of all claims 1-11 is respectfully requested.



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Should the Examiner deem that any further action by the applicants would be desirable to place this application in even better condition for issue, the Examiner is requested to telephone applicants' undersigned representatives.

Respectfully submitted,

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